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## Teacher of the Year

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### *Marshall Davenson of Keene High School*

This year the Conservation District is very happy to honor Marshall Davenson as the 2013 Teacher of the Year. Marshall's teaching philosophy is to take the big units he teaches his high school students, like water pollution and ecology, and try and get a local focus to each of them to bring them to life and give the subject matter more meaning. He currently teaches a spectrum of topics at different levels including Integrated Science, a freshman level class that focuses on earth and space science, as well as AP Environmental Science, a survey class that focuses on ecology, soils, energy, air and water pollution, to top level students at Keene High School.

Davenson encourages place based learning with a diversity of partnerships with consulting ecologists, municipalities, non-profits, and institutes of higher education. Each topic of study seems to have a community partner to enhance and deepen the learning experience for his students. Marshall takes pride in the partnerships he has cultivated and respects the professionals that volunteer their time to work with his classes. Often he will have guest speakers, from organizations like UNH Cooperative Extension, and believes the students learn a lot from getting professionals to come into the classroom and share their work and their passion.

Before starting as a science teacher at

Keene High School in 2000 Marshall Davenson had a diverse background in science and education that prepared him for the position. Originally from Connecticut, he received a Bachelor of Science in Environmental Science from Keene State College and went on to earn a Masters of Science in Environmental Studies and



Teacher Certification from Antioch University New England. He taught at a high school in Bellows Falls Vermont for one year and also taught geology as an Adjunct Professor at Keene State College for eight semesters. Before that, he worked for the State of New Hampshire a ranger at Monadnock State Park.

Water is a big piece of the curriculum for his students and Davenson ensures they have a lot of ways to connect to this vital resource. For the past several years every September Jeff Littleton, of Moosewood Ecological, takes students to Beaver Brook, a local stream to sample macro-invertebrates (large water bugs).

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“Davenson is a community asset, he introduces his students to real world science and exposes them to different careers in the field. It’s obvious he really cares about providing them opportunities to follow their passion,” shares Littleton. The goal is to develop a long term monitoring program for water quality in Beaver Brook and to demonstrate to students the applicability of what they are learning.

Another hands on experience he provides for his students is to work with Plymouth State University on monitoring water quality. Davenson wrote a proposal to host two conductivity, temperature and water level sensors. These sensors gather data every 3 minutes and every month the students go out and check the sensors. They are in the second year of a five year study of data collection. “this is a great jumping off point for asking questions about water quality,” says Davenson. The students gather data and can see how the City of Keene is impacting water quality in the region. Marshall also has his students clean up Keene’s surface waters each year by working with Eric Swope with the City of Keene to pull trash out of the river during the annual Source To Sea River Clean Up.

Davenson shares “What makes this job fun and rewarding is the community we live in. The resources are right there and it is great to tie into.” An additional resource Davenson has his students focus on is air quality. He has

developed a partnership with Keene State College professor Nora Traviss. Traviss comes into the class to discuss air pollution and the challenges the City of Keene has with particulate matter. Students then rallied around public education on air quality. The class created public service announcements on air pollution that will aired on the Keene Air Quality Task Force website.

One other way he offers his students to better understand air pollution, and the effect on our local environment, is through collaboration with the Forest Watch Program at UNH. They are looking at white pine needles and ozone damage throughout the year. Pine trees are tagged on campus, samples are taken, and needles are analyzed and reports



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are sent to UNH. “This teaches kids a lot about remote detection in environmental science,” this is the second year they are doing this program.

The study of plant ecology is no ordinary task for Davenson’s students. Currently they have a collaboration with Antioch New England University’s Monadnock Ecological Research and Education (MERE) Program. Keene High School has a plot of a sub-alpine plant community Mount Monadnock. Each year students get field experience with ecology in a local application with inventory of plants on their plot. Davenson’s students partner with Peter Palmiotto and his graduate students to set up transects, inventory plant species, and track change over time. Davenson and Palmiotto have worked for six years to set up the project protocol and they hope the partnership continues many years into the future.

Beyond his stellar work with students during the traditional school day Marshall serves as the advisor for the Envirothon Club at KHS. Envirothon is an environmental education program and competition for high school students throughout North America. Learning is centered around four universal testing categories including soils/land use, aquatic ecology, forestry, and wildlife. The Keene team meets weekly after school year round.



Davenson started working with the Envirothon team as a co-advisor with Cliff Lerner six years ago. After two years as co-advisor he became their principal advisor and is now going into his fifth year in that capacity. All the hard work and training really pays off because a Keene team has won the state competition for the past 9 years and in 2012 he took his team to Montana for the North American competition where they placed an impressive fourth place. He has taken his team to nationals four times since he has been the advisor and this is the best they have placed in those years.

“Envirothon builds up an academic culture that some kids really want to be a part of” shares Davenson of the program he believes so strongly in. He has many guest speakers and a great deal of reading material for the students but his personal goal for the future is to incorporate more fun with this learning club. He is always working hard to recruit new students to Envirothon, particularly freshman and sophomores.

Marshall Davenson is a brilliant teacher and a great guy. It is an honor of the Cheshire County Conservation District to award him as the 2013 Cheshire County and New Hampshire Association of Conservation District’s Teacher of the Year.